

10/532050

JC12 Rec'd PCT/PTC 11 MAR 2005  
PCT/US03/28654 . 11032005

SEQLIST.TXT

SEQUENCE LISTING

<110> Behrens, Sven-Erik  
Isken, Olaf  
Grassmann, Claus W.  
Sarisky, Robert T.

<120> A Set Of Ubiquitous Cellular Proteins  
Involved in Viral Life Cycle

<130> P51375

<140> Unknown  
<141> 2005-03-11

<150> PCT/US03/28654  
<151> 2003-09-12

<150> 60/410,460  
<151> 2002-09-13

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35 40 45  
Gly Asn Ser Thr Asn Lys Lys Asp Ala Gln Ser Asn Ala Ala Arg Asp  
50 55 60  
Phe Val Asn Tyr Leu Val Arg Ile Asn Glu Ile Lys Ser Glu Glu Val  
65 70 75 80  
Pro Ala Phe Gly Val Ala Ser Pro Pro Pro Leu Thr Asp Thr Pro Asp  
85 90 95  
Thr Thr Ala Asn Ala Glu Gly Asp Leu Pro Thr Thr Met Gly Gly Pro  
100 105 110  
Leu Pro Pro His Leu Ala Leu Lys Ala Glu Asn Asn Ser Glu Val Gly  
115 120 125  
Ala Ser Gly Tyr Gly Val Pro Gly Pro Thr Trp Asp Arg Gly Ala Asn  
130 135 140  
Leu Lys Asp Tyr Tyr Ser Arg Lys Glu Glu Gln Glu Val Gln Ala Thr  
145 150 155 160  
Leu Glu Ser Glu Glu Val Asp Leu Asn Ala Gly Leu His Gly Asn Trp  
165 170 175  
Thr Leu Glu Asn Ala Lys Ala Arg Leu Asn Gln Tyr Phe Gln Lys Glu  
180 185 190  
Lys Ile Gln Gly Glu Tyr Lys Tyr Thr Gln Val Gly Pro Asp His Asn  
195 200 205  
Arg Ser Phe Ile Ala Glu Met Thr Ile Tyr Ile Lys Gln Leu Gly Arg  
210 215 220  
Arg Ile Phe Ala Arg Glu His Gly Ser Asn Lys Lys Leu Ala Ala Gln  
225 230 235 240  
Ser Cys Ala Leu Ser Leu Val Arg Gln Leu Tyr His Leu Gly Val Val  
245 250 255  
Glu Ala Tyr Ser Gly Leu Thr Lys Lys Lys Glu Gly Glu Thr Val Glu  
260 265 270  
Pro Tyr Lys Val Asn Leu Ser Gln Asp Leu Glu His Gln Leu Gln Asn

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Ser Asn Trp Asn Pro Trp Thr Ser Ser Asn Ile Asp Glu Gly Pro Leu	335	340	345
Ala Phe Ala Thr Pro Glu Gln Ile Ser Met Asp Leu Lys Asn Glu Leu	350	355	360
Met Tyr Gln Leu Glu Gln Asp His Asp Leu Gln Ala Ile Leu Gln Glu	365	370	375
Arg Glu Leu Leu Pro Val Lys Lys Phe Glu Ser Glu Ile Leu Glu Ala	380	385	390
Ile Ser Gln Asn Ser Val Val Ile Ile Arg Gly Ala Thr Gly Cys Gly	395	405	410
Lys Thr Thr Gln Val Pro Gln Phe Ile Leu Asp Asp Phe Ile Gln Asn	415	420	425
Asp Arg Ala Ala Glu Cys Asn Ile Val Val Thr Gln Pro Arg Arg Ile	430	435	440
Ser Ala Val Ser Val Ala Glu Arg Val Ala Phe Glu Arg Gly Glu Glu	445	450	455
Pro Gly Lys Ser Cys Gly Tyr Ser Val Arg Phe Glu Ser Ile Leu Pro	460	465	470
Arg Pro His Ala Ser Ile Met Phe Cys Thr Val Gly Val Leu Leu Arg	475	485	490
Lys Leu Glu Ala Gly Ile Arg Gly Ile Ser His Val Ile Val Asp Glu	495	500	505
Ile His Glu Arg Asp Ile Asn Thr Asp Phe Leu Leu Val Val Leu Arg	510	515	520
Asp Val Val Gln Ala Tyr Pro Glu Val Arg Ile Val Leu Met Ser Ala	525	530	535
Thr Ile Asp Thr Ser Met Phe Cys Glu Tyr Phe Phe Asn Cys Pro Ile	540	545	550
Ile Glu Val Tyr Gly Arg Thr Tyr Pro Val Gln Glu Tyr Phe Leu Glu	555	565	570
Asp Cys Ile Gln Met Thr His Phe Val Pro Pro Pro Lys Asp Lys Lys	560	580	585
Lys Lys Asp Lys Asp Asp Asp Gly Gly Glu Asp Asp Asp Ala Asn Cys	590	595	600
Asn Leu Ile Cys Gly Asp Glu Tyr Gly Pro Glu Thr Arg Leu Ser Met	605	610	615
Ser Gln Leu Asn Glu Lys Glu Thr Pro Phe Glu Leu Ile Glu Ala Leu	620	625	630
Leu Lys Tyr Ile Glu Thr Leu Asn Val Pro Gly Ala Val Leu Val Phe	640	645	650
Leu Pro Gly Trp Asn Leu Ile Tyr Thr Met Gln Lys His Leu Glu Met	655	660	665
Asn Pro His Phe Gly Ser His Arg Tyr Gln Ile Leu Pro Leu His Ser	670	675	680
Gln Ile Pro Arg Glu Glu Gln Arg Lys Val Phe Asp Pro Val Pro Val	685	690	695
Gly Val Thr Lys Val Ile Leu Ser Thr Asn Ile Ala Glu Thr Ser Ile	700	705	710
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Lys Leu Phe Thr Ala His Asn Asn Met Thr Asn Tyr Ser Thr Val Trp	735	740	745
Ala Ser Lys Thr Asn Leu Glu Gln Arg Lys Gly Arg Ala Gly Arg Ser	750	755	760
Thr Ala Gly Phe Cys Phe His Leu Cys Ser Arg Ala Arg Phe Glu Arg	765	770	775
Leu Glu Thr His Met Thr Pro Glu Met Phe Arg Thr Pro Leu His Glu	780	785	790
Ile Ala Leu Ser Ile Lys Leu Leu Arg Leu Gly Gly Ile Gly Gln Phe	800	805	810
Leu Ala Lys Ala Ile Glu Pro Pro Pro Leu Asp Ala Val Ile Glu Ala	815		

## SEQLIST.TXT

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Cys Thr Ile Ala Ala Ala Thr Cys Phe Pro	Glu Pro Phe Ile Asn Glu	
885	890	895
Gly Lys Arg Leu Gly Tyr Ile His Arg Asn Phe	Ala Gly Asn Arg Phe	
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930	935	940
Leu Asn Met Ala Thr Leu Arg Met Thr Trp	Glu Ala Lys Val Gln Leu	
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Lys Glu Ile Leu Ile Asn Ser Gly Phe Pro	Glu Asp Cys Leu Leu Thr	
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Lys Lys Val Gln Ser Asp Gly Gln Ile Val	Leu Val Asp Asp Trp Ile	
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<213> Homo sapien

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 35 40 45  
 Ile Asp Glu Gln Glu Lys Gly Ser Ser Glu Gln Ala Glu Ser Asp Asn  
 50 55 60  
 Met Asp Val Pro Pro Glu Asp Asp Ser Lys Glu Gly Ala Gly Glu Gln  
 65 70 75 80  
 Lys Thr Glu His Met Thr Arg Thr Leu Arg Gly Val Met Arg Val Gly  
 85 90 95  
 Leu Val Ala Lys Cys Leu Leu Lys Gly Asp Leu Asp Leu Glu Leu  
 100 105 110  
 Val Leu Leu Cys Lys Glu Lys Pro Thr Thr Ala Leu Leu Asp Lys Val  
 115 120 125  
 Ala Asp Asn Leu Ala Ile Gln Leu Ala Ala Val Thr Glu Asp Lys Tyr  
 130 135 140  
 Glu Ile Leu Gln Ser Val Asp Asp Ala Ala Ile Val Ile Lys Asn Thr  
 145 150 155 160  
 Lys Glu Pro Pro Leu Ser Leu Thr Ile His Leu Thr Ser Pro Val Val  
 165 170 175  
 Arg Glu Glu Met Glu Lys Val Leu Ala Gly Glu Thr Leu Ser Val Asn  
 180 185 190  
 Asp Pro Pro Asp Val Leu Asp Arg Gln Lys Cys Leu Ala Ala Leu Ala  
 195 200 205  
 Ser Leu Arg His Ala Lys Trp Phe Gln Ala Arg Ala Asn Gly Leu Lys  
 210 215 220  
 Ser Cys Val Ile Val Ile Arg Val Leu Arg Asp Leu Cys Thr Arg Val  
 225 230 235 240  
 Pro Thr Trp Gly Pro Leu Arg Gly Trp Pro Leu Glu Leu Leu Cys Glu  
 245 250 255  
 Lys Ser Ile Gly Thr Ala Asn Arg Pro Met Gly Ala Gly Glu Ala Leu  
 260 265 270  
 Arg Arg Val Leu Glu Cys Leu Ala Ser Gly Ile Val Met Pro Asp Gly  
 275 280 285  
 Ser Gly Ile Tyr Asp Pro Cys Glu Lys Glu Ala Thr Asp Ala Ile Gly  
 290 295 300  
 His Leu Asp Arg Gln Gln Arg Glu Asp Ile Thr Gln Ser Ala Gln His  
 305 310 315 320  
 Ala Leu Arg Leu Ala Ala Phe Gly Gln Leu His Lys Val Leu Gly Met  
 325 330 335  
 Asp Pro Leu Pro Ser Lys Met Pro Lys Lys Pro Lys Asn Glu Asn Pro  
 340 345 350  
 Val Asp Tyr Thr Val Gln Ile Pro Pro Ser Thr Thr Tyr Ala Ile Thr  
 355 360 365  
 Pro Met Lys Arg Pro Met Glu Glu Asp Gly Glu Glu Lys Ser Pro Ser  
 370 375 380  
 Lys Lys Lys Lys Ile Gln Lys Lys Glu Glu Lys Ala Glu Pro Pro  
 385 390 395 400  
 Gln Ala Met Asn Ala Leu Met Arg Leu Asn Gln Leu Lys Pro Gly Leu  
 405 410 415  
 Gln Tyr Lys Leu Val Ser Gln Thr Gly Pro Val His Ala Pro Ile Phe  
 420 425 430  
 Thr Met Ser Val Glu Val Asp Gly Asn Ser Phe Glu Ala Ser Gly Pro  
 435 440 445  
 Ser Lys Lys Thr Ala Lys Leu His Val Ala Val Lys Val Leu Gln Asp  
 450 455 460  
 Met Gly Leu Pro Thr Gly Ala Glu Gly Arg Asp Ser Ser Lys Gly Glu  
 465 470 475 480  
 Asp Ser Ala Glu Glu Thr Glu Ala Lys Pro Ala Val Val Ala Pro Ala  
 485 490 495  
 Pro Val Val Glu Ala Val Ser Thr Pro Ser Ala Ala Phe Pro Ser Asp  
 500 505 510  
 Ala Thr Ala Glu Gln Gly Pro Ile Leu Thr Lys His Gly Lys Asn Pro  
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 Val Met Glu Leu Asn Glu Lys Arg Arg Gly Leu Lys Tyr Glu Leu Ile  
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## SEQLIST.TXT

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 580 585 590  
 Pro Leu Ala Leu Asp Ala Asn Lys Lys Lys Arg Ala Pro Val Pro Val  
 595 600 605  
 Arg Gly Gly Pro Lys Phe Ala Ala Lys Pro His Asn Pro Gly Phe Gly  
 610 615 620  
 Met Gly Gly Pro Met His Asn Glu Val Pro Pro Pro Asn Leu Arg  
 625 630 635 640  
 Gly Arg Gly Arg Gly Gly Ser Ile Arg Gly Arg Gly Arg Gly  
 645 650 655  
 Phe Gly Gly Ala Asn His Gly Gly Tyr Met Asn Ala Gly Ala Gly Tyr  
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 Gly Ser Tyr Gly Tyr Gly Gly Asn Ser Ala Thr Ala Gly Tyr Ser Gln  
 675 680 685  
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 705 710 715 720  
 Asn Tyr Asn Ser Pro Val Pro Pro Lys His Ala Gly Lys Lys Gln Pro  
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 His Gly Gly Gln Gln Lys Pro Ser Tyr Gly Ser Gly Tyr Gln Ser His  
 740 745 750  
 Gln Gly Gln Gln Ser Tyr Asn Gln Ser Pro Tyr Ser Asn Tyr Gly  
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 Ser Tyr Ser Asn Ser Tyr Asn Ser Pro Gly Gly Gly Ser Asp  
 785 790 795 800  
 Tyr Asn Tyr Glu Ser Lys Phe Asn Tyr Ser Gly Ser Gly Arg Ser  
 805 810 815  
 Gly Gly Asn Ser Tyr Gly Ser Gly Gly Ala Ser Tyr Asn Pro Gly Ser  
 820 825 830  
 His Gly Gly Tyr Gly Gly Ser Gly Gly Ser Ser Tyr Gln Gly  
 835 840 845  
 Lys Gln Gly Gly Tyr Ser Gln Ser Asn Tyr Asn Ser Pro Gly Ser Gly  
 850 855 860  
 Gln Asn Tyr Ser Gly Pro Pro Ser Ser Tyr Gln Ser Ser Gln Gly Gly  
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&lt;210&gt; 4

&lt;211&gt; 2685

&lt;212&gt; DNA

&lt;213&gt; Homo sapien

&lt;400&gt; 4

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&lt;210&gt; 5

&lt;211&gt; 702

&lt;212&gt; PRT

&lt;213&gt; Homo sapien

&lt;400&gt; 5

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Lys	His	Ser	Ser	Val	Tyr	Pro	Thr	Gln	Glu	Glu	Leu	Glu	Ala	Val	Gln
								20	25					30	
Asn	Met	Val	Ser	His	Thr	Glu	Arg	Ala	Leu	Lys	Ala	Val	Ser	Asp	Trp
								35	40				45		
Ile	Asp	Glu	Gln	Glu	Lys	Gly	Ser	Ser	Glu	Gln	Ala	Glu	Ser	Asp	Asn
								50	55			60			
Met	Asp	Val	Pro	Pro	Glu	Asp	Asp	Ser	Lys	Glu	Gly	Ala	Gly	Glu	Gln
								65	70		75			80	
Lys	Thr	Glu	His	Met	Thr	Arg	Thr	Leu	Arg	Gly	Val	Met	Arg	Val	Gly
								85	90			95			
Leu	Val	Ala	Lys	Cys	Leu	Leu	Lys	Gly	Asp	Leu	Asp	Leu	Glu	Leu	
								100	105			110			
val	Leu	Leu	Cys	Lys	Glu	Lys	Pro	Thr	Thr	Ala	Leu	Leu	Asp	Lys	Val
								115	120			125			
Ala	Asp	Asn	Leu	Ala	Ile	Gln	Leu	Ala	Ala	Val	Thr	Glu	Asp	Lys	Tyr
								130	135		140				
Glu	Ile	Leu	Gln	Ser	Val	Asp	Asp	Ala	Ala	Ile	Val	Ile	Lys	Asn	Thr
								145	150		155			160	
Lys	Glu	Pro	Pro	Leu	Ser	Leu	Thr	Ile	His	Leu	Thr	Ser	Pro	Val	Val
								165	170			175			
Arg	Glu	Glu	Met	Glu	Lys	Val	Leu	Ala	Gly	Glu	Thr	Leu	Ser	Val	Asn
								180	185			190			
Asp	Pro	Pro	Asp	Val	Leu	Asp	Arg	Gln	Lys	Cys	Leu	Ala	Ala	Leu	Ala
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Ser	Leu	Arg	His	Ala	Lys	Trp	Phe	Gln	Ala	Arg	Ala	Asn	Gly	Leu	Lys
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Ser	Cys	Val	Ile	Val	Ile	Arg	Val	Leu	Arg	Asp	Leu	Cys	Thr	Arg	Val
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Pro	Thr	Trp	Gly	Pro	Leu	Arg	Gly	Trp	Pro	Leu	Glu	Leu	Leu	Cys	Glu
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## SEQLIST.TXT

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 275 280 285  
 Ser Gly Ile Tyr Asp Pro Cys Glu Lys Glu Ala Thr Asp Ala Ile Gly  
 290 295 300  
 His Leu Asp Arg Gln Gln Arg Glu Asp Ile Thr Gln Ser Ala Gln His  
 305 310 315 320  
 Ala Leu Arg Leu Ala Ala Phe Gly Gln Leu His Lys Val Leu Gly Met  
 325 330 335  
 Asp Pro Leu Pro Ser Lys Met Pro Lys Lys Pro Lys Asn Glu Asn Pro  
 340 345 350  
 Val Asp Tyr Thr Val Gln Ile Pro Pro Ser Thr Thr Tyr Ala Ile Thr  
 355 360 365  
 Pro Met Lys Arg Pro Met Glu Glu Asp Gly Glu Glu Lys Ser Pro Ser  
 370 375 380  
 Lys Lys Lys Lys Ile Gln Lys Lys Glu Glu Lys Ala Glu Pro Pro  
 385 390 395 400  
 Gln Ala Met Asn Ala Leu Met Arg Leu Asn Gln Leu Lys Pro Gly Leu  
 405 410 415  
 Gln Tyr Lys Leu Val Ser Gln Thr Gly Pro Val His Ala Pro Ile Phe  
 420 425 430  
 Thr Met Ser Val Glu Val Asp Gly Asn Ser Phe Glu Ala Ser Gly Pro  
 435 440 445  
 Ser Lys Lys Thr Ala Lys Leu His Val Ala Val Lys Val Leu Gln Asp  
 450 455 460  
 Met Gly Leu Pro Thr Gly Ala Glu Gly Arg Asp Ser Ser Lys Gly Glu  
 465 470 475 480  
 Asp Ser Ala Glu Glu Thr Glu Ala Lys Pro Ala Val Val Ala Pro Ala  
 485 490 495  
 Pro Val Val Glu Ala Val Ser Thr Pro Ser Ala Ala Phe Pro Ser Asp  
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 Ala Thr Ala Glu Gln Gly Pro Ile Leu Thr Lys His Gly Lys Asn Pro  
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 530 535 540  
 Ser Glu Thr Gly Gly Ser His Asp Lys Arg Phe Val Met Glu Val Glu  
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 565 570 575  
 Lys Ala Tyr Ala Ala Leu Ala Ala Leu Glu Lys Leu Phe Pro Asp Thr  
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 595 600 605  
 Arg Gly Gly Pro Lys Phe Ala Ala Lys Pro His Asn Pro Gly Phe Gly  
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 Met Gly Gly Pro Met His Asn Glu Val Pro Pro Pro Asn Leu Arg  
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 Gly Arg Gly Arg Gly Gly Ser Ile Arg Gly Arg Gly Arg Gly Arg Gly  
 645 650 655  
 Phe Gly Gly Ala Asn His Gly Gly Tyr Met Asn Ala Gly Ala Gly Tyr  
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 <211> 2107  
 <212> DNA  
 <213> Homo sapien

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SEOLIST.TXT

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<211> 406  
<212> PRT  
<213> *Homo sapien*

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 35 40 45  
 Asp Glu Thr Ser Phe Ser Glu Ala Leu Leu Lys Arg Asn Gln Asp Leu  
 50 55 60  
 Ala Pro Asn Ser Ala Glu Gln Ala Ser Ile Leu Ser Leu Val Thr Lys  
 65 70 75 80  
 Ile Asn Asn Val Ile Asp Asn Leu Ile Val Ala Pro Gly Thr Phe Glu  
 85 90 95  
 Val Gln Ile Glu Glu Val Arg Gln Val Gly Ser Tyr Lys Lys Gly Thr  
 100 105 110  
 Met Thr Thr Gly His Asn Val Ala Asp Leu Val Val Ile Leu Lys Ile  
 115 120 125  
 Leu Pro Thr Leu Glu Ala Val Ala Ala Leu Gly Asn Lys Val Val Glu  
 130 135 140  
 Ser Leu Arg Ala Gln Asp Pro Ser Glu Val Leu Thr Met Leu Thr Asn  
 145 150 155 160  
 Glu Thr Gly Phe Glu Ile Ser Ser Ser Asp Ala Thr Val Lys Ile Leu  
 165 170 175  
 Ile Thr Thr Val Pro Pro Asn Leu Arg Lys Leu Asp Pro Glu Leu His  
 180 185 190  
 Leu Asp Ile Lys Val Leu Gln Ser Ala Leu Ala Ala Ile Arg His Ala  
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## SEQLIST.TXT

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Gln Ile Leu Ala Ala Gly Leu Phe Leu Pro Gly Ser Val Gly Ile Thr			
275	280	285	
Asp Pro Cys Glu Ser Gly Asn Phe Arg Val His Thr Val Met Thr Leu			
290	295	300	
Glu Gln Gln Asp Met Val Cys Tyr Thr Ala Gln Thr Leu Val Arg Ile			
305	310	315	320
Leu Ser His Gly Gly Phe Arg Lys Ile Leu Gly Gln Glu Gly Asp Ala			
325	330	335	
Ser Tyr Leu Ala Ser Glu Ile Ser Thr Trp Asp Gly Val Ile Val Thr			
340	345	350	
Pro Ser Glu Lys Ala Tyr Glu Lys Pro Pro Glu Lys Lys Glu Gly Glu			
355	360	365	
Glu Glu Glu Asn Thr Glu Arg Thr Thr Ser Arg Arg Gly Arg Arg			
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<212> DNA  
<213> Homo sapien

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